

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-14 (canceled).

Claim 15 (new): A branching filter comprising:

a first filter with a relatively low passband including a first temperature property-improvement thin film; and

a second filter with a relatively high passband including a second temperature property-improvement thin film; wherein

a thickness of the first temperature property-improvement thin film is different from that of the second temperature property-improvement thin film such that the temperature coefficient of frequency of the first filter is greater than that of the second filter.

Claim 16 (new): The branching filter according to Claim 15, wherein the first filter and the second filter are surface acoustic wave filters.

Claim 17 (new): The branching filter according to Claim 15, wherein the first filter and the second filter are piezoelectric thin-film resonance filters.

Claim 18 (new): The branching filter according to Claim 16, wherein each of the surface acoustic wave filters include a piezoelectric substrate made of one of a LiTaO₃ substrate and a LiNbO₃ substrate, and the first and the second temperature property-improvement thin films are SiO₂ films provided on the piezoelectric substrate.

Claim 19 (new): The branching filter according to Claim 18, wherein a thickness of the SiO₂ film provided on the first filter is greater than that of the SiO₂ film provided on the second filter.

Claim 20 (new): The branching filter according to Claim 19, wherein, when the wavelength of the second filter is represented by λ_2 , the thickness of the SiO₂ film provided on the second filter is in a range of about 0.08 λ_2 to about 0.28 λ_2 .

Claim 21 (new): The branching filter according to Claim 19, wherein, when the wavelength of the first filter is represented by λ_1 , the thickness of the SiO₂ film of the first filter is in a range of about 0.18 λ_1 to about 0.38 λ_1 .

Claim 22 (new): The branching filter according to Claim 21, wherein, when the wavelength of the second filter is represented by λ_2 , the thickness of the SiO₂ film provided on the second filter is in a range of about 0.08 λ_2 to about 0.28 λ_2 .

Claim 23 (new): The branching filter according to Claim 15, wherein the first filter and the second filter are ladder filters each including a plurality of series arm resonators and a plurality of parallel arm resonators.

Claim 24 (new): The branching filter according to Claim 23, further comprising at least one inductance element connected in series to one of the plurality of parallel arm resonators of the ladder filter of the first filter.

Claim 25 (new): The branching filter according to Claim 23, further comprising at least one inductance element connected in parallel to one of the plurality of series arm resonators of the ladder filter of the second filter.

Claim 26 (new): The branching filter according to Claim 15, wherein the first filter and the second filter include different piezoelectric substrates and are defined by respective chip components.

Claim 27 (new): The branching filter according to Claim 15, wherein the first filter and the second filter include the same piezoelectric substrate and are collectively defined by a single chip component.

Claim 28 (new): The branching filter according to Claim 17, wherein each of the piezoelectric thin-film resonators comprises:

- a substrate having a recess portion opening to an upper side thereof;
- an insulating film laminated so as to cover the recess portion of the substrate;
- a lower electrode disposed on the insulating film;
- a piezoelectric thin film disposed on the lower electrode; and
- an upper electrode disposed on the piezoelectric thin film so as to face the lower electrode.

Claim 29 (new): The branching filter according to Claim 28, wherein the piezoelectric thin film is made of one of a titanate zirconate lead ceramic, ZnO and AlN.

Claim 30 (new): The branching filter according to Claim 28, wherein the upper and lower electrodes are made of one of Al and Ag.

Claim 31 (new): The branching filter according to Claim 17, wherein each of the piezoelectric thin-film resonators comprises:

a substrate having a penetrating hole extending from an upper side to a lower side thereof;

an insulating film laminated so as to cover an upper opening of the penetrating hole;

a lower electrode disposed on the insulating film;

a piezoelectric thin film disposed on the lower electrode; and

an upper electrode disposed on the piezoelectric thin film so as to face the lower electrode.

Claim 32 (new): The branching filter according to Claim 17, wherein each of the piezoelectric thin-film resonators comprises:

a substrate having a penetrating hole extending from an upper side to a lower side thereof;

a common electrode disposed so as to cover an upper opening of the penetrating hole;

an insulating film disposed on the common electrode;

a pair of lower electrodes disposed on the insulating film;

a piezoelectric thin film disposed on the pair of lower electrodes; and

an upper electrode disposed on the piezoelectric thin film so as to face each of the pair of lower electrodes.

Claim 33 (new): A surface acoustic wave filter used as a reception filter of a branching filter, wherein the surface acoustic wave filter includes structural elements that are configured such that a temperature coefficient of frequency is positive with respect to a change in temperature.

Claim 34 (new): The surface acoustic wave filter according to Claim 33, further comprising:

a piezoelectric substrate made of one of a LiTaO₃ and a LiNbO₃ substrate,

electrodes provided on the piezoelectric substrate; and

a temperature property-improvement thin film defined by a SiO₂ film disposed so as to cover the electrodes on the piezoelectric substrate; wherein

when a wavelength determined by an electrode cycle is represented by λ , the thickness of the SiO₂ film is in a range of about 0.3 λ to about 0.38 λ so as to have a positive temperature coefficient of frequency with respect to the change in temperature.